Electronic TUBES

12AF6

PENTODE

FOR RF AND IF AMPLIFIER APPLICATIONS IN AUTOMOBILE RECEIVERS

DESCRIPTION AND RATING

The 12AF6 is a miniature pentode intended for use as a radio-frequency or intermediate-frequency amplifier in automobile radio receivers. The tube is specially designed to operate with plate and screen voltages supplied directly from a 12-volt storage battery.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential
Heater Voltage, AC or DC . . . . 12.6* Volts
Heater Current . . . . 0.15 Amperes
Direct Interelectrode Capacitances†
Grid-Number 1 to Plate, maximum . . . . 0.006 μμf
Input . . . . 5.5 μμf
Output . . . . 4.8 μμf

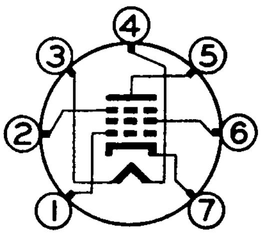
MECHANICAL

Mounting Position—Any
Envelope—T-5½, Glass
Base—E7-1, Miniature Button 7-Pin

* When used in automotive service from a 12-volt source, under no circumstances should the heater voltage be less than 10.0 volts or more than 15.9 volts. These extreme variations in heater voltage may be tolerated for short periods; however, operation at or near these absolute limits in heater voltage necessarily involves sacrifice in performance at low heater voltage and in life expectancy at high heater voltage. Equipment reliability can be significantly increased with improved supply-voltage regulation.

† Without external shield.

BASING DIAGRAM

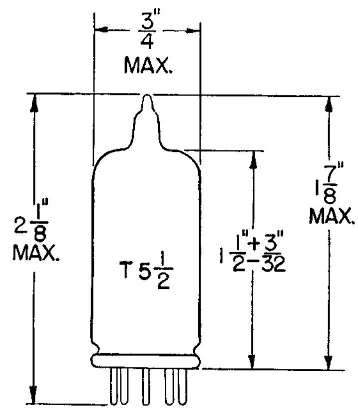


RETMA 7BK

TERMINAL CONNECTIONS

Pin 1—Grid Number 1
Pin 2—Internal Shield and Grid Number 3 (Suppressor)
Pin 3—Heater
Pin 4—Heater
Pin 5—Plate
Pin 6—Grid Number 2 (Screen)
Pin 7—Cathode

PHYSICAL DIMENSIONS



RETMA 5-2

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Plate Voltage	16 Volts
Screen Voltage	16 Volts
Positive DC Grid-Number 1 Voltage	0 Volts
Heater-Cathode Voltage	
Heater Positive with Respect to Cathode	16 Volts
Heater Negative with Respect to Cathode	16 Volts
Grid-Number 1 Circuit Resistance	2.2 Megohms

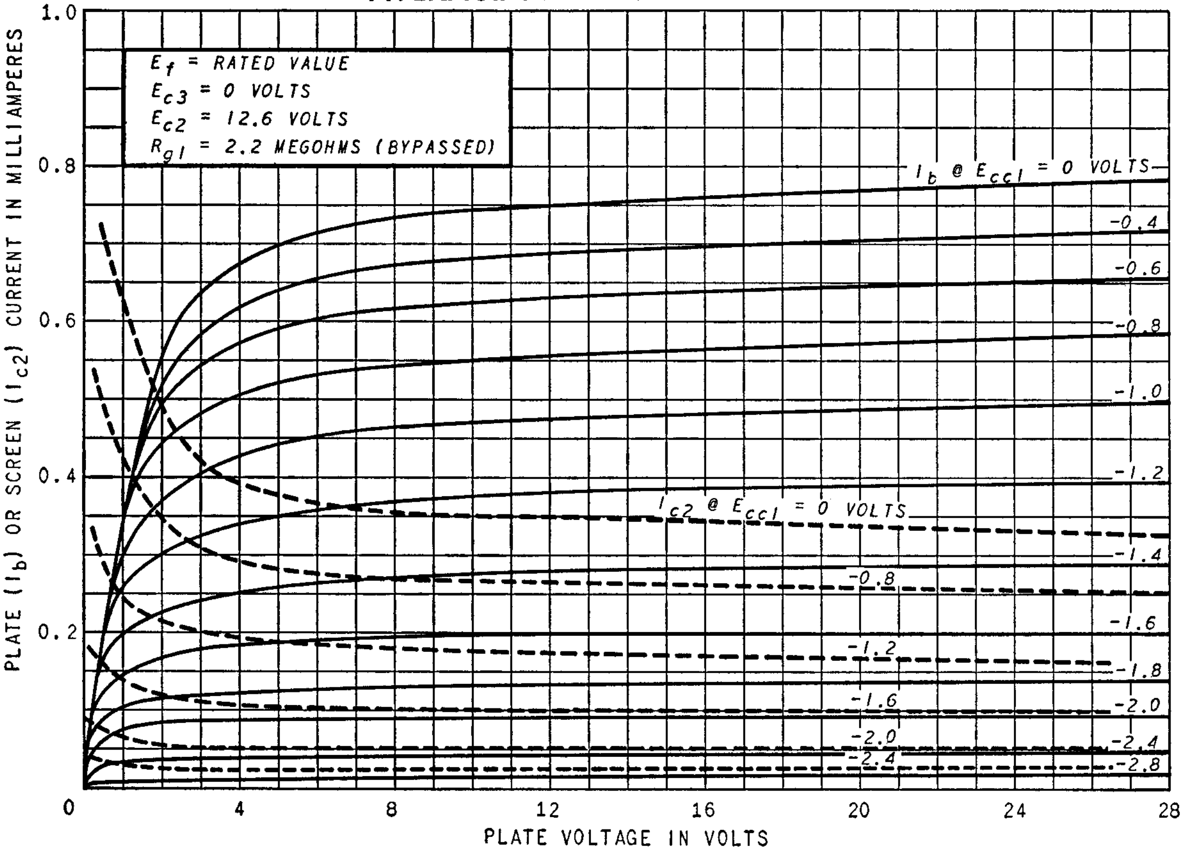
Design-Maximum Ratings are the limiting values expressed with respect to bogie tubes at which satisfactory tube life can be expected to occur. To obtain satisfactory circuit performance, therefore, the equipment designer must establish the circuit design so that no design-maximum value is exceeded with a bogie tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, and environmental conditions.

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A_1 AMPLIFIER

Plate Voltage	12.6 Volts
Suppressor Voltage	0 Volts
Screen Voltage	12.6 Volts
Grid-Number 1 Supply Voltage	0 Volts
Grid-Number 1 Resistor (bypassed)	2.2 Megohms
Plate Resistance, approximate	0.3 Megohms
Transconductance	1150 Micromhos
Plate Current	0.75 Milliamperes
Screen Current	0.35 Milliamperes
Grid-Number 1 Voltage, approximate	
$G_m = 40$ Micromhos	−2.7 Volts

AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS

